

A105  
Cantor, Fitzgerald Securities  
M-2 10/14/82  
TAA 2392

**GENERAL CONDITIONS**

MATERIALS: NEW, UNLESS BEST OF THEIR RESPECTIVE KINDS AND FREE FROM DEFECTS. BASIS OF QUALITY SHALL BE LATEST STANDARDS OF ASTM, AIA, FEDERAL SPECIFICATIONS, OR OTHER ACCEPTABLE STANDARDS.

THE CONTRACTOR SHALL PAY ALL FEES, GIVE ALL NOTICES, FILE ALL NECESSARY PERMITS AND OBTAIN ALL PERMITS AND CERTIFICATES OF APPROVAL REQUIRED BY ANY AGENCIES WITH ALL WORK UNDER THIS CONTRACT. HE SHALL COMPLY WITH ALL CITY, STATE, FEDERAL LAWS, ORDINANCES, RULES AND REGULATIONS AND WITH THE NATIONAL ELECTRICAL CODES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE GENERAL ARRANGEMENT OF WORK.

THE CONTRACTOR SHALL BE HELD TO HAVE EXAMINED THE SITE FOR HIS WORK BEFORE THE WORK BEGINS. NO ADDITIONAL COMPENSATION WILL BE PAID FOR CONDITIONS FOUND DURING THE COURSE OF THE CONTRACT.

THE CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT SITE AND BE RESPONSIBLE FOR THE ACCURACY OF SAME.

THE CONTRACTOR SHALL MAINTAIN EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED IN SECTIONS FOR MOVING THROUGH LIMITED SPACES.

THE CONTRACTOR SHALL CO-ORDINATE HIS WORK WITH REFLECTED CEILING PLANS AND OTHER PLANS.

THE CONTRACTOR SHALL WORK IN SUCH A MANNER SO AS TO BE READILY ACCESSIBLE FOR MAINTENANCE AND REPAIRS.

THE CONTRACTOR SHALL BE MADE TO MINIMIZE VIBRATION AND NOISE THRU CAREFUL INSTALLATION AND ERECTION.

STORAGE MATERIALS IN SPACES SO DESIGNATED BY ARCHITECT OWNER.

REMOVE RUBBISH FROM PREMISES AS OFTEN AS NECESSARY OR AS DIRECTED.

ALL LIFTING AND PATCHING IN CONNECTION WITH TRADE SHALL BE DONE BY THE CONTRACTOR.

EQUIPMENT INTENDED FOR PERMANENT INSTALLATION SHALL NOT BE OPERATED FOR TEMPORARY PURPOSES.

FURNISH FOR EACH MOTOR, AN APPROVED STARTER WITH REQUIRED OVERLOADS AND CONTACTS FOR MOUNTING AND WIRING BY ELECTRICAL CONTRACTOR.

ALL EQUIPMENT TO BE STARTED-UP AND CHECKED-OUT BY CONTRACTOR WITH ASSISTANCE FROM MANUFACTURER'S PERSONNEL.

ALL WORK AND EQUIPMENT TO BE FULLY GUARANTEED FOR ONE (1) YEAR FROM THE DATE OF FINAL PAYMENT AND ACCEPTANCE.

ALL WORK AND EQUIPMENT SHALL BE CLEAR TO THE SATISFACTION OF THE OWNER BEFORE TURNING SAME OVER TO THE OWNER.

SHOP DRAWINGS FOR EQUIPMENT SELECTION SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO ORDERING, FABRICATION AND/OR INSTALLATION OF SAME. FOUR COPIES OF EACH SUBMITTAL FOR EQUIPMENT ARE REQUIRED: ONE (1) SET FOR ARCHITECT AND (3) SETS FOR SHEETMETAL FABRICATION DRAWINGS.

PROVIDE SERVICE AND OPERATING MANUAL; INCLUDE EQUIPMENT CUTS, WIRING AND CONTROL DIAGRAM, START UP AND SHUTDOWN INSTRUCTION, MAINTENANCE INSTRUCTIONS, AND PARTS LIST, ALL IN TRIPPLICATE.

CONNECT NEW WORK TO EXISTING IN A NEAT AND APPROVED MANNER. RESTORE EXISTING WORK IN MAKING SUCH CONNECTION TO PERFECT CONDITION.

INTERUPTION OF HEATING, POWER AND AUXILIARY SYSTEMS SHALL BE COORDINATED WITH THE BUILDING AUTHORITIES AND SUCH OUTAGES SHALL OCCUR ONLY DURING PREARRANGED ACCEPTABLE TIMES. THE EXISTING BUILDING SHALL NOT BE LEFT WITHOUT USE OF HEAT, LIGHTING, POWER, ETC., EXCEPT FOR FINAL CONNECTIONS, WHICH SHALL BE PERFORMED AT A TIME CONVENIENT TO AND WITH NO ADDITIONAL EXPENSE TO THE LANDLORD.

ALL WORK IN OCCUPIED TENANT AREAS SHALL BE PERFORMED ON OTHER THAN NORMAL WORKING HOURS AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN SHUTDOWN OF EXISTING SYSTEMS BECOMES NECESSARY. SHUTDOWN TIME SHALL BE KEPT TO A MINIMUM.

**CODES, LAWS AND ORDINANCES**

ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL BOARD OF FIRE UNDERWRITERS, U.S.A. BOARD OF STANDARDS AND APPEALS (B.S.A.), UNDERWRITERS LABORATORIES (U.L.) APPROVED AND LABELED. DAMPERS SHALL CONFORM TO THE N.T.C. STANDARD DETAILS AND SPECIFICATIONS (PDNVA).

**RECORD DRAWINGS**

THE CONTRACTOR SHALL, DURING THE PROGRESS OF THE WORK, KEEP A CAREFUL RECORD OF ALL CHANGES WHEN THE ACTUAL INSTALLATION DIFFERS FROM THAT SHOWN ON THE CONTRACT DRAWINGS. AT THE CONCLUSION THEREOF, HE SHALL PREPARE A SET OF RECORD-REPRODUCIBLE DRAWINGS INDICATING THE "AS-BUILT" MANNER OF INSTALLATION WHICH SHALL BE TURNED OVER TO THE OWNER.

**DUCTWORK**

DUCTWORK IN COMPLETE CONFORMANCE WITH RECOMMENDED CONSTRUCTION FOR RECTANGULAR SHEET-METAL DUCTS, (LATEST ASHRAE GUIDE) AND ALL OTHER AUTHORITIES HAVING JURISDICTION.

DUCTWORK SHALL BE TESTED, BALANCED AND SEALED TO AN ALLOWABLE LEAKAGE OF 10%.

STRAP HANGERS SHALL NOT BE LESS THAN 1" X 1/8" THICK AND ATTACHED TO SIDE OF DUCT WITH SHEETMETAL SCREWS. (SEE "DUCT HANGER DETAIL").

FLEXIBLE DUCT CONNECTIONS SHALL BE NEOPRENE OR GLASS CLOTH. UNCLAMPED SECTION SHALL BE 4" IN LENGTH.

ALL ACCESS DOORS SHALL BE AS PER LATEST SMACNA STANDARDS.

SUPPLY DIFFUSERS, REGISTERS AND GRILLS (TITUS AS STANDARD). UNITS SHALL BE FURNISHED WITH BAKED ENAMEL FINISH: COLOR AND FRAME AS SELECTED BY ARCHITECT/OWNER.

SQUARE DIFFUSERS SHALL BE STEEL MODEL TDC WITH OPPOSED BLADE DAMPER AND EQUALIZING GRID.

SUPPLY REGISTERS SHALL BE ALUMINIUM MODEL 272-FL5.

RETURN/EXHAUST REGISTERS SHALL BE STEEL MODEL 25-RL5.

PAINTING: INSIDE DUCTWORK WHERE VISIBLE THRU OUTLET SHALL BE FLAT BLACK.

TEST AND BALANCE AIR QUANTITIES AT ALL FANS AND AIR OUTLETS BY ANEMOMETER, ANEMOTHERM, VELOMETER, OR PITOT TUBE AND DRAFT GAGE, WHICHEVER IS APPLICABLE. AIR QUANTITIES AT AIR OUTLETS SHALL BE WITHIN 10% OF THOSE SPECIFIED.

**TEST LOG**

SUBMIT FOUR (4) COPIES OF A COMPLETE, TABULATED LOG OF ALL TEST READINGS INCLUDING PRESSURES, TEMPERATURES, VELOCITIES, AIR AND WATER QUANTITIES, RPM, AND ELECTRIC MOTOR VOLTAGE AND CURRENT TO ARCHITECT FOR APPROVAL.

**SOUND TREATMENT**

SOUNDLINE ALL DUCTWORK TO A DISTANCE OF 15'-0" FROM FAN DISCHARGE AND INLET. SOUNDLINING SHALL BE 1" THICK MAT FACED FIBERGLASS BOUTHER. DUCT SIZES INDICATED SHALL BE INSIDE CLEAR DIMENSIONS. WHERE ACOUSTICAL LINING IS SPECIFIED THERMAL INSULATION IS NOT REQUIRED.

**INSULATION - DUCTWORK**

CONCEALED DUCTWORK: ALL AIR CONDITIONED SUPPLY DUCTWORK SHALL BE INSULATED WITH 1 1/2" THICK PINK WRAP TYPE IV OR GENS-CORNING FIBERGLASS AS STANDARD. TAPE AND SEAL ALL SEAMS PER MANUFACTURER'S RECOMMENDATIONS. RETURN AIR DUCTWORK IN HUNG CEILING SHALL NOT BE INSULATED. INSULATION & SOUND TREATMENT SHALL CONFORM TO R513-1, PAR 305 OF N.Y.C. BUILDING LAWS (FLAME SPREAD 25, SMOKE DEVELOPED 50).

**FIRE DAMPERS**

FIRE DAMPERS ARE BASED ON AIR BALANCE, MODEL #119 TYPE AL, BL, AND CL. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S APPROVED INSTALLATION INSTRUCTIONS AND SHALL BE N.Y.C. BOARD OF STANDARDS AND APPEALS (B.S.A.), UNDERWRITERS LABORATORIES (U.L.) APPROVED AND LABELED. DAMPERS SHALL CONFORM TO THE N.T.C. STANDARD DETAILS AND SPECIFICATIONS (PDNVA).

**PIPING**

**ARRANGEMENT AND ALIGNMENT OF PIPING**

1. GROUP PIPING WHEREVER PRACTICAL, INSTALLED IN STRAIGHT PARALLEL LINES ARRANGED AND ALIGNED IN A UNIFORM DIRECT MANNER. ALL CHANGES IN DIRECTION OF PIPING SHALL BE MADE WITH FITTINGS.

2. PIPE LINES SHALL BE GUIDED, SUPPORTED AND ANCHORED IN SUCH A MANNER THAT PIPE LINES WILL NOT CREEP, SAG OR BUCKLE.

3. INSTALL PIPING CAREFULLY ALLOWING FOR PROPER ALIGNMENT, SLOPE AND EXPANSION.

4. RUN HORIZONTAL PIPING AT RIGHT ANGLES AND NOT DIAGONALLY ACROSS ROOMS AND/OR OTHER PIPING.

5. VENT AUXILIARY COOLING WATER PIPING AT ALL HIGH POINTS.

**TEST REQUIREMENTS (AUX. COOLING WATER)**

OPERATING PRESSURE	150 PSIG
OPERATING TEMPERATURE	80°F - 100°F
HYDROSTATIC TEST PRESSURE	1.5 X OPERATING PRESSURE
DURATION OF TEST	2 HOURS

ISOLATE EQUIPMENT, CONTROLS INSTRUMENTS AND VALVES FROM THE PIPING SYSTEM DURING HYDROSTATIC TESTS.

**PIPING & FITTINGS**

SYSTEM	PIPE	FITTINGS
AUX. COOLING WATER	BLACK STEEL PIPE, CONFORMING TO ASTM A106 SCHEDULE 40 GRADE B	2-1/2" CAST IRON, SCREWED 250 LB. CLASS
AC UNIT CONDENSATE DRAIN	COPPER ASTM B-88 HARD TEMPER TYPE (L)	WROUGHT COPPER SOLDER B16.18 5 ANST B16.18

**VALVES**

VALVES SHALL BE SIMILAR AND EQUAL TO 250 LB. CLASS, MALLEABLE IRON WITH BRONZE SEATS, GRINNELL FIGURE 554, U.S.A.

2. NIPPLES 6" LENGTH OR LESS, SHALL BE EXTRA HEAVY AND SHALL BE FORMED FROM MATERIAL HAVING THE SAME QUALITIES AS THE ADJACENT PIPING. CLOSE NIPPLES SHALL NOT BE USED.

**SOLDER JOINTS**

95-5 TENSILE SOLDER HAVING A MELTING POINT GREATER THAN 450°F. EXCESS SOLDER SHALL BE REMOVED WHILE STILL IN FLUX. SOLDER SHALL BE FILLED TO THE FACE OF THE FITTING.

**THERMOMETERS**

1. THERMOMETERS FOR PIPING SHALL BE OF THE "ALL ANGLE" (UNIVERSAL) TYPE, SEPARATE SOCKET, INDUSTRIAL TYPE WITH 3/32" STAINLESS STEEL EXTENSION NECK WELLS.

2. THERMOMETER FOR AUXILIARY COOLING SHALL OPERATE AT 0°F RANGE AND SHALL INCLUDE A SUFFICIENT SAFETY MARGIN AT EITHER END.

3. THERMOMETERS SHALL BE AS MANUFACTURED BY ALBERT A. WEISS, INSTRUMENT CO., ASHCROFT OR APPROVED EQUAL.

**PRESSURE GAUGES**

1. PRESSURE GAUGES SHALL BE OF THE BOURDON TUBE SPRING TYPE WITH 4-1/2" DIAL SIZES. GAUGES SHALL HAVE BLACK ALUMINUM CASE WITH BLACK NUMBERS OR WHITE BACKGROUND. THE GAUGES SHALL BE AS MANUFACTURED BY ALBERT A. WEISS, WEKSLER INSTRUMENT CO., ASHCROFT OR APPROVED EQUAL.

2. THE PRESSURE RANGE FOR THE AUXILIARY COOLING, SHALL BE 0" - 300" PSI AND THE BOURDON TUBE SHALL BE BRONZE.

**STRAINERS**

STRAINERS SHALL BE SIMILAR AND EQUAL TO THOSE MANUFACTURED BY MUELLER STEAM SPECIALTY CO. SCREWED "V" STRAINERS FOR PIPES 1/2" AND SMALLER SHALL BE 250 LB. NO. 11. THE SCREENS FOR THE STRAINERS SHALL BE STAINLESS STEEL. STRAINERS SHALL BE PROVIDED WITH CAPPED BLOWDOWN VALVES.

**SLEEVES AND ESCUTCHEONS**

EXPOSED PIPING PASSING THROUGH WALLS SHALL BE FITTED WITH CHROMIUM PLATED CAST BRASS ESCUTCHEONS WITH FASTENING SET SCREWS SIMILAR AND EQUAL TO FERGUSON MANUFACTURING CO. F & S MANUFACTURING CO. OR RITTER PATTERSON AND CASTING CO. SLEEVES SHALL BE PROVIDED AS PER DETAIL.

**PIPE SUPPORTS AND HANGERS**

1. ALL SUPPORTS AND PARTS SHALL CONFORM TO THE LATEST REQUIREMENTS OF THE ANSI CODES FOR PRESSURE PIPING B31.10 AND MSS STANDARD PRACTICE SP-58.

2. HANGERS SHALL BE MANUFACTURED BY GRINNELL CO., CENTRAL IRON, FEE AND MASON, BLANKEN CO. OR AN APPROVED EQUAL.

3. PIPE HANGERS, RODS, INSERTS AND CLAMPS SHALL BE THOSE APPROVED FOR THEIR RESPECTIVE USES BY THE UNDERWRITERS LABORATORIES, INC.

4. UNLESS OTHERWISE SPECIFICALLY APPROVED, HANGER SIZE AND SPACING SHALL BE:

PIPE SIZES	MAX. HANGER SPACING	MINIMUM ROD SIZES
1/2" to 1"	9 ft. o.c.	3/8"
1 1/2" to 2 1/2"	9 ft. o.c.	1/2"

5. ALL FERROUS HANGERS & SUPPORTS SHALL BE PAINTED WITH ONE COAT OF RED LEAD & OIL.

**VALVES**

TYPE	SIZE	JENKINS FIG. NO.	CRANE FIG. NO.	STOCKHAM FIG. NO.
GATE	UP TO 8"	125 PSI	470	428-UP
GATE	UP TO 12"	150 PSI	490	431

2. BALANCING VALVES SHALL BE NON-LUBRICATING TYPE PLUG VALVE WITH POSITION INDICATOR, MEMORY STOP, 150 LB. VALVES SHALL BE AS MANUFACTURED BY HOMESTEAD INDUSTRIES OR APPROVED EQUAL.

**IDENTIFY THE SIZE AND DIRECTION OF FLOW**

EACH SET SHALL CONSIST OF ONE SIGN ON WHICH THE NAME OF THE SERVICE IS PRINTED IN LETTERS NOT LESS THAN 1 INCH HIGH.

2. BANDS SHALL BE IN COLORS AS INDICATED BELOW AND SHALL CONFORM TO ANSI STANDARD A-13.1.

SYSTEM	BACKGROUND	LETTERS & ARROW
AUXILIARY COOLING WATER	GREEN	BLACK

ADHESIVE BANDS SHALL BE W.H. BRADY COMPANY, SETON CORE, OR AN APPROVED EQUAL.

**THREADED JOINTS**

STEEL PIPE THREADED JOINTS SHALL BE MADE TIGHT USING ONLY AN APPROVED PIPE JOINT COMPOUND OR TAPE, PLACED ON THE MALE THREAD ONLY.

**INSULATION FOR DOMESTIC WATER AND DRAIN PIPE**

1. INSULATION: 1/2" THICK ONE PIECE FIBERGLASS, FLAME SPREAD RATING NOT GREATER THAN 25" SMOKE RATING "50". (INSULATE VALVES AND FITTINGS).

**CUTTING AND PATCHING**

1. PIPING PASSING THROUGH WALLS SHALL HAVE A TRIM OPENING CUT NO GREATER THAN NECESSARY FOR THE INSTALLATION OF A SLEEVE SECURED THEREIN. SLEEVES SHALL BE 1/2" IN DIAMETER LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE OR REQUIRED INSULATION PASSING THROUGH AND OF SUFFICIENT LENGTH TO BE FLUSH WITH THE FINISHED WALL SURFACES.

2. PIPING PASSING THROUGH CONCRETE FLOORS SHALL HAVE THE OPENING CORE DRILLED 1/2" IN DIAMETER LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE PASSING THROUGH.

3. ANNULAR SPACES BETWEEN PIPING AND SLEEVES OR CORE DRILLED FLOOR OPENINGS SHALL BE PACKED WITH THERMAFIBER AND SEALED TO REPAIR THE FIRE INTEGRITY OF THE WALLS AND FLOORS WITH A NON-HARDENING COMPOUND SIMILAR AND EQUAL TO UNISEAL OR DUKSEAL AS MANUFACTURED BY JOHNS-MANVILLE CO.

**AUTOMATIC CONTROLS**

**GENERAL**

1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED CONDUIT, WIRE, RELAYS, SWITCHES, DAMPER MOTORS, AND THERMOSTATS AS REQUIRED TO PROVIDE SEQUENCE OF OPERATIONS AS DESCRIBED BELOW. ALL DEVICES SHALL BE AS MANUFACTURED BY HONEYWELL CO.

2. THIS CONTRACTOR SHALL PROVIDE REQUIRED CONTROL DIAGRAMS, SEQUENCE OF OPERATION AND CUTS OF CONTROL DEVICES FOR ENGINEERS APPROVAL. (SEE "SHOP DRAWINGS").

3. WHEN MODULATING SERVICE IS CALLED FOR, FULLY PROPORTIONING MOTORS AND CONTROLS SHALL BE USED. ALL DAMPERS SHALL BE OF THE LOW LEAKAGE TYPE, GUARANTEED NOT TO LEAK IN EXCESS OF 20 CFM PER FT.² AT 4" STATIC PRESSURE. SHEET-METAL CONTRACTOR SHALL PROVIDE SAVING WHERE REQUIRED.

4. ALL FIRESTATS SHALL BE ADJUSTABLE MANUAL RESET TYPE MOUNTED IN DISCHARGE DUCTS AND RETURN AIR DUCT. SET AT 150°F AND 125°F TO SHUTDOWN AC UNIT.

5. FURNISH AND INSTALL ALL CONTROL WIRING. EXCEPT AS OTHERWISE NOTED.

**SEQUENCE OF OPERATION**

THE NEW A.C. UNIT SHALL START AND STOP MANUALLY FROM WALL MOUNTED SWITCH (WITH LIGHT INDICATOR AND THERMOSTAT). THERMOSTAT (ADJUSTABLE) SHALL CONTROL THE REFRIGERANT CIRCUIT TO MAINTAIN SETTING. A HIGH LEVEL WATER SENSOR IN DRAIN PAN SHALL STOP A.C. WHEN WATER LEVEL IS TOO HIGH. A FLOW SWITCH WILL PREVENT COMPRESSOR FROM OPERATING WHEN THERE IS NO FLOW.

**EQUIPMENT NOTES**

A.C. UNIT SHALL BE MANUFACTURED BY SINGER MODEL CC330. UNIT CAPACITY 33,000 BTUH (TOTAL) 21,800 BTUH (SENS.) AT 80°F/67°F W.B. EAT., CONDENSER WATER 7.5 GPM ENT 85°F, 3.51 KW INPUT, 1/6 HP MOTOR FOR EVAPORATOR AND CONDENSER BLOWERS. ELECTRICAL CHARACTERISTICS 208V/3/60. M.E.A. NO. 108-74-E.

TAA NO. 2392  
DATE APPROVED 10/14/82



CANTOR FITZGERALD SECURITIES CORP.  
WORLD TRADE CENTER

ALTERATION TO MUNI ROOM 105TH FLOOR  
SPECIFICATIONS

GOLDMAN SOKOLOW COPELAND, P.C.  
CONSULTING ENGINEERS  
25 MADISON AVENUE, NEW YORK, N.Y. 10017

Elliot Saltzman, P.E.  
Architect A.I.A.  
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DATE: 10-14-82  
JOB NUMBER: 7002  
RS  
M 2

Released for Construction